



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70) Rec'd PCT/PTO 23 JUN 2005

Applicant's or agent's file reference 8336 WO Z RSF-ALG	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/007221	International filing date (day/month/year) 05 July 2003 (05.07.2003)	Priority date (day/month/year) 11 July 2002 (11.07.2002)
International Patent Classification (IPC) or national classification and IPC F16H 3/66		
Applicant ZF FRIEDRICHSHAFEN AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 20 December 2003 (20.12.2003)	Date of completion of this report 13 October 2004 (13.10.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/007221

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- the international application as originally filed  
 the description:

pages \_\_\_\_\_ 1-12 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

- the claims:

pages \_\_\_\_\_ 5-21 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , as amended (together with any statement under Article 19)  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ 1-4 \_\_\_\_\_, filed with the letter of 05 August 2004 (05.08.2004)

- the drawings:

pages \_\_\_\_\_ 1/1 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

- the sequence listing part of the description:

pages \_\_\_\_\_ , as originally filed  
 pages \_\_\_\_\_ , filed with the demand  
 pages \_\_\_\_\_ , filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/fig. \_\_\_\_\_

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	1-21	YES
	Claims		NO
Inventive step (IS)	Claims	1-21	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-21	YES
	Claims		NO

## 2. Citations and explanations

## 1. Reference is made to the following document:

D1: DE-A-199 49 507.

2. Document D1, figure 12, which is considered to be the closest prior art, discloses a multi-stage transmission system of planetary construction, more particularly an automatic transmission system for a motor vehicle, comprising an input shaft (1) and an output shaft (2) which are arranged in a housing, three single-carrier planetary gear sets, at least seven rotary shafts and at least six shift elements, comprising brakes and clutches, whose selective engagement establishes different driving ratios between the input shaft (1) and the output shaft (2), in such a way that seven forward speeds and one reverse speed can be achieved, the input being effected by a first shaft (1), which is permanently connected to the sun wheel (11) of the first planetary gear set (RS1), the output being effected by a second shaft (2), which is permanently connected to the ring gear (43) of the second planetary gear set and an element of the third planetary gear set, a third shaft (15) being permanently connected to the carrier (12) of the first planetary gear set (RS1), a fourth shaft (45) being permanently connected to the carrier of the second planetary gear set and an

additional element (33) of the third planetary gear set, a fifth shaft (13) being permanently connected to the ring gear of the first planetary gear set (RS1), a sixth shaft (31) being permanently connected to the sun wheel of the third planetary gear set, a seventh shaft (41) being permanently connected to the sun wheel of the second planetary gear set, a clutch (E) releasably connecting the first shaft and the fourth shaft, a clutch (A) releasably connecting the first shaft and the sixth shaft, a clutch (B) releasably connecting the third shaft and the seventh shaft, and a clutch (D) releasably connecting the fifth shaft and the seventh shaft.

3. The subject matter of claim 1 differs therefore from the known transmission in that the third shaft can be coupled to the housing by a brake and the fourth shaft can be coupled to the housing by a brake. The subject matter of claim 1 is therefore novel (PCT Article 33(2)).
4. The problem addressed by the present invention can therefore be considered that of lowering the construction costs and reducing the drag losses and gearing losses.

The combination of features in independent claim 1 is neither known from, nor suggested by, the available prior art. The proposed solution is therefore inventive. Independent claim 1 and dependent claims 2 and 4-21 therefore comply with the requirements of PCT Article 33(2) and (3).

5. Claim 3 is inconsistent with claim 1, because the second and third planetary gear sets are not single-carrier planetary gear sets and claim 3 is therefore independent. The subject matter of claim 3 differs therefore from the transmission known from D1, figure 9 in that the third shaft can be coupled to

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the housing by a brake and a clutch releasably connects the third and seventh shafts. The problem addressed by the present invention can therefore be considered that of lowering the construction costs and reducing the drag losses and gearing losses. The combination of features in claim 3 is neither known from, nor suggested by, the available prior art. The proposed solution is therefore inventive. Claim 3 therefore complies with the requirements of PCT Article 33(2) and (3).